AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-24 (Canceled)

25. (New) A method of requesting an authentication to a base station in a subscriber station, the method comprising:

transmitting a subscriber station basic capability negotiation request (SBC- REQ) message to the base station to select an authentication mode;

receiving a subscriber station basic capability negotiation response (SBC-RSP) message including information on an authentication mode that is selected by the base station; and

transmitting an authentication request message corresponding to the selected authentication mode to the base station.

26. (New) The method of claim 25, wherein each of the SBC-REQ message and the SBC-RSP message includes a parameter for selecting the authentication mode.

27. (New) The method of claim 25, wherein the selected authentication mode includes at least one of a digital certificate based authentication mode and an extensible authentication protocol (EAP) based authentication mode.

28. (New) The method of claim 25, wherein, when the selected authentication mode is a digital certificate based authentication mode, the authentication request message is a message for requesting the authentication by the base station.

29. (New) The method of claim 25, wherein, when the selected authentication mode is a digital certificate based authentication mode, the authentication request message includes an authentication information message and an authorization request message.

30. (New) The method of claim 25, wherein, when the selected authentication mode is an EAP-based authentication mode, the authentication request message is a message for

requesting the authentication by an authentication, authorization, and accounting (AAA) server,

wherein the AAA server is connected to the base station and performs the authentication.

31. (New) The method of claim 25, wherein, when the selected authentication mode is an EAP-based authentication mode, the authentication request message includes an EAP payload,

wherein the EAP payload includes data for the authentication.

32. (New) The method of claim 25, wherein the authentication request message is a privacy key management request (PKM-REQ) message included in a medium access control (MAC) message.

33. (New) A method of performing an authentication on a subscriber station in a base station, the method comprising:

receiving a subscriber station basic capability negotiation request (SBC-REQ) message for selecting an authentication mode from the subscriber station;

transmitting a first response message to the subscriber station, the first response message including information on the authentication mode selected in accordance with the SBC-REQ message;

receiving an authentication request message corresponding to the selected authentication mode from the subscriber station; and

transmitting a second response message to the subscriber station, the second response message representing a result of the authentication performed in accordance with the authentication request message.

34. (New) The method of claim 33, wherein the authentication mode includes at least one of a digital certificate based authentication mode and an extensible authentication protocol (EAP) based authentication mode.

35. (New) The method of claim 33, wherein, when the selected authentication mode is an EAP-based authentication mode, the receiving of the authentication request message

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comprises requesting an authentication, authorization, and accounting (AAA) server to perform an authentication through an standardized authentication protocol of an upper layer.

36. (New) The method of claim 33, wherein, when the selected authentication mode is an EAP-based authentication mode, the second response message includes an EAP payload,

wherein the EAP payload includes data for the authentication.

37. (New) The method of claim 33, wherein, when the selected authentication mode is a digital certificate based authentication mode, the second response message includes an authentication reply message.

38. (New) The method of claim 33, wherein the second response message is a privacy key management response (PKM-RSP) message included in a medium access control (MAC) message.

39. (New) An apparatus for performing an authentication on a subscriber station in a base station, the apparatus comprising:

means for receiving a first message from the subscriber station, the first message including information on at least one authentication mode that can be supported by the subscriber station;

means for selecting an authentication mode that can be performed by the base station among the at least one authentication mode, and for transmitting a second message including information on the selected authentication mode to the subscriber station;

means for receiving an authentication request from the subscriber station by receiving a privacy key management request (PKM-REQ) message having a message type according to the selected authentication mode; and

means for transmitting a privacy key management response (PKM-RSP) message having a message type according to the selected authentication mode to the subscriber station in response to the authentication request.

40. (New) The apparatus of claim 39, wherein, when the selected authentication mode is

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an extensible authentication protocol (EAP) based authentication mode, the message type of each of the PKM-REQ message and the PKM-RSP message is an EAP transfer including an EAP payload,

wherein the EAP payload includes data for the authentication.

41. (New) A method of negotiating an authentication mode with a subscriber station in a base station, the method comprising:

receiving a subscriber station basic capability negotiation request (SBC-REQ) message from the subscriber station, the SBC-REQ message including a parameter representing at least one authentication mode that can be supported by the subscriber station;

selecting an authentication mode that can be performed by the base station among the at least one authentication mode; and

transmitting a subscriber station basic capability negotiation response (SBC-RSP) message to the subscriber station, the SBC-RSP including a parameter representing the selected authentication mode.

42. (New) The method of claim 41, further comprising:

receiving a privacy key management request (PKM-REQ) message having a message type according to the selected authentication mode; and

transmitting a privacy key management response (PKM-RSP) message having a message type according to the selected authentication mode to the subscriber station in response to the PKM-REQ message.

43. (New) The method of claim 42, wherein, when the selected authentication mode is an extensible authentication protocol (EAP) based authentication mode, the message type of each of the PKM-REQ message and the PKM-RSP message is an EAP transfer including an EAP payload, and

the EAP payload includes data for an authentication.

44. (New) A method of performing an authentication on a subscriber station in a base station, the method comprising:

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selecting an extensible authentication protocol (EAP) based authentication mode as an authentication mode by negotiating with the subscriber station;

receiving an authentication request by receiving a privacy key management request (PKM-REQ) message from the subscriber station, the PKM-REQ message having a message type according to the EAP-based authentication mode; and

transmitting a privacy key management response (PKM-RSP) message to the subscriber station in response to the authentication request, the PKM-RSP message having a message type according to the EAP based authentication mode.

45. (New) The method of claim 44, wherein the message type of each of the PKM-REQ message and the PKM-RSP message is an EAP transfer including an EAP payload, and

the EAP payload includes data for the authentication.